CLAIMS

1. A method for preparing a hydrocracking catalyst consisting of following steps in this consecutive order:

(i) providing an extrudate consisting of a zeolite and a binder, wherein the binder is alumina, wherein the extrudate has been obtained by shaping, calcination and cooling, wherein the zeolite is ZSM-5 having a silica (SiO_2) to alumina (Al_2O_3) molar ratio of 25-75;

(ii) not comprising: drying the extrudate at a temperature of 100-300°C for a period of at least 1 hour;

iii) depositing a hydrogenation metal, which is Pt, on the extrudate by an impregnation for a period of 0.5 to 1.5 hours with an aqueous solution of $H_2PtCl_6.6H_2O$ such that the amount of the hydrogenation metal is 0.015-0.095 wt%with respect to the total catalyst;

(iv) not comprising: rinsing the metal deposited extrudate with water; and

(v) heat-treating the metal deposited extrudate in air at a temperature of 270-290ºC for a period of 1-3 hours;

2. The method according to claim 1, wherein catalyst comprises a total of less than 0.05 wt% alkali and alkaline earth metal, preferably less than 0.04 wt%, or less than 0.01 wt%, based upon a total weight of the catalyst.

3. The method according to claim 1, wherein the zeolite has a silica (SiO_2) to alumina (Al_2O_3) molar ratio of 30-65, preferably 35-60, more preferably 40-55.

4. The method according to any one of the preceding claims, wherein the amount of the hydrogenation metal is 0.035-0.080 wt%, with respect to the total catalyst.

5. The method according to any one of the preceding claims, wherein hydrocracking catalyst comprises less than 0.01 parts tin, less than 0.02 parts lead, less than 0.01 parts bismuth, and less than 0.01 parts molybdenum, (on the basis of 100 parts by weight of the total catalyst).

6. The method according to any one of the preceding claims, wherein the amount of the binder in the hydrocracking catalyst is 10-50 wt% with respect to the total catalyst.

7. The method according to any one of the preceding claims, wherein the hydrocracking catalyst is an extrudate having an average diameter of 0.1-15 mm.

8. A process for producing BTX, comprising:

(a) providing a hydrocracking feed stream comprising C_5-C_{12} hydrocarbons,

(b) contacting the hydrocracking feed stream in the presence of hydrogen with the hydrocracking catalyst formed by the method of any of the preceding claims, under process conditions including a temperature of 425-580°C, a pressure of 300-5000 kPa gauge and a Weight Hourly Space Velocity of 3-30 h^{-1} to produce a hydrocracking product stream comprising BTX and

(c) separating the BTX from the hydrocracking product stream.

9. The process according to Claim 8, wherein the hydrocracking feed stream comprises a fresh feed stream which is first stage or multi-stage hydro-treated pyrolysis gasoline, straight run naphtha, hydrocracked gasoline, light coker naphtha and coke oven light oil, FCC gasoline, reformate or mixtures thereof, which has optionally been subjected to treatments such as hydrogenation, enrichment of mono-aromatic compounds and/or depentanization and optionally a stream recycled from the hydrocracking product stream.

10. The process according to any one of Claims 8-9, wherein the hydrocracking feed stream is provided by a process which does not involve the step of removing benzene.

11. The process according to any one of Claims 8-10, wherein the hydrocracking feed stream comprises 10-90 wt% of benzene.